ABSTRACT

BACKGROUND

Hypothyroidism is a relatively common disease worldwide.It is defined as a clinical state resulting from insufficient secretion of thyroid hormone from thyroid gland due to some structural and/or functional impairment of thyroid hormone production.Hypothyroidism affects all organ systems.Respiratory system like any other organ system is affected by Hypothyroidism though respiratory manifestations are seldom the major complaints in hypothyroidism.The spectrum of disease involvement can range from mild dyspnea to more severe and life threatening respiratory failure.Lung volumes are usually normal but studies have shown findings suggestive of restrictive pattern of impairment.This has been attributed to decrease in both expiratory and inspiratory muscle strength,alveolar hypoventilation due to depression of hypoxic and hypercapnic ventilator drives and decrease in maximal breathing capacity in patients with Hypothyroidism.Difficulty in weaning hypothyroid patients from assisted ventilation is another associated complication.

AIMS AND OBJECTIVES

The aim was to study clinical and investigative profile of patients with Hypothyroidism and to determine if there is any correlation between thyroid function with the pulmonary function among the study population.

MATERIALS AND METHODS

This is a cross-sectional study of 50 cases admitted in Coimbatore Medical College Hospital , Coimbatore was done in the period from July 2016 to June 2017. All patients will be subjected to Biochemical investigations such as Thyroid function tests-Serumtriiodothyronine(T3)Serumthyroxine(T4) and Serum Thyroid Stimulating hormone(TSH),Pulmonary Function tests such as Forced Vital

capacity (FVC),Forced expiratory volume in 1st second(FEV1),Peak expiratory flow rate(PEFR),Forced expiratory flow(FEF)-(25%-75%).

OBSERVATION

Hypothyroidism can have numerous effects on the respiratory system. Nevertheless, it does affect the respiratory system including respiratory muscle weakness, alveolar hypoventilation due to decreased hypoxic and hypercapnic ventilator drives, upper airway obstruction, central and obstructive sleep apnoea and even pleural effusion. Lung volumes are usually normal or mildly reduced, but maximal breathing capacity and diffusing capacity are usually reduced.FVC & FEV1 Values were found to be lower in hypothyroids. But it was significant only for FVC. The FEV1/FVC value is significantly increased among hypothyroid patients.The degree and duration of thyroid disorders lead to reduced ventilator lung function in patients with hypothyroidism.There is a significant difference in the lung functions between those subjects not on treatment and those on thyroid hormone replacement therapy. The decrease in spirometric measurements in hypothyroidism can be corrected by hormone replacement therapy

CONCLUSION

The presence of impaired pulmonary function tests in hypothyroidism has been already demonstrated in various studies. There is significant reduction in the dynamic lung functions of hypothyroid patients. Respiratory system can be affected in hypothyroidism. Simple spirometry can be considered as a means for evaluation of pulmonary function tests in these patients.

KEYWORDS

Hypothyroidism , Pulmonary function tests, FVC, FEV_1, FEV_1/FVC